

I claim:

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1. A method comprising:

2 providing a moldable sheath with sufficient moldability to at least temporarily  
3 retain a specific shape imparted to it when implanted in a body cavity;  
4 implanting said sheath within a body cavity;  
5 molding said implanted sheath to said specific shape, which specific shape is  
6 held without continued assistance of a shaping tool; and  
7 utilizing said implanted sheath for a medical procedure.

2. An apparatus comprising:

3 a moldable sheath with sufficient moldability at body temperatures to at least  
4 temporarily retain a specific shape imparted to it; and  
5 a lumen defined in said moldable sheath.

3. The apparatus of claim 2 further comprising a shaping tool for disposition  
4 in said lumen of said implanted sheath to impart said specific shape to said sheath.

4. The apparatus of claim 3 where said shaping tool is separate from said  
5 sheath.

1           6.     The apparatus of claim 2 further comprising a sealing valve coupled to  
2     said sheath to seal said lumen.

1            7.        The apparatus of claim 2 further comprising a diagnostic or therapeutic  
2        device coupled to said sheath.

1           8.     The apparatus of claim 2 where said sheath has at least one portion with a  
2     stiffness different than remaining portions of said sheath.

1           9.     The apparatus of claim 2 where said sheath has at least one portion with a  
2     moldability different than remaining portions of said sheath.

1            10. The apparatus of claim 2 where said sheath is deployed in a body cavity  
2    and has at least one portion with a moldability which can be altered at the time of  
3    implantation in said body cavity.

1            11      The apparatus of claim 10 where said at least one portion has its  
2 moldability altered before said sheath is implanted into said body cavity.

1           12.    The apparatus of claim 10 where said at least one portion has its  
2 moldability altered after said sheath is implanted into said body cavity.

1           13.    A method comprising:  
2           providing a moldable sheath capable of at least temporarily retaining a specific  
3 shape imparted to it when implanted in a body cavity;  
4           implanting said sheath within a body cavity;  
5           molding said implanted sheath to said specific shape while within said body  
6 cavity, which specific shape is held without continued assistance of a shaping tool; and  
7           utilizing said implanted sheath for a medical procedure within said body cavity  
8 while said sheath is in said specific shape.

1           14.    The method of claim 13 where molding said implanted sheath to a specific  
2 shape comprising applying a shaping tool to said sheath to induce said sheath to  
3 assume said specific shape.

1           15.    The method of claim 13 further comprising removing a shaping tool from  
2 said sheath when said sheath is characterized by a sufficient moldability so that removal  
3 of said shaping tool does not result in any substantial displacement of said sheath from  
4 said specific shape.

1 16. The method of claim 14 where applying a shaping tool to said sheath  
2 comprises telescopically disposing said shaping tool within a lumen in said sheath.

1 17. The method of claim 14 where applying a shaping tool to said sheath  
2 comprises manipulating said shaping tool to steer said sheath.

1 18. The method of claim 14 where applying a shaping tool to said sheath  
2 comprises disposing said shaping tool exteriorly to said sheath and imposing a shaping  
3 force thereon.

1 19. The method of claim 13 where utilizing said implanted sheath for a  
2 medical procedure comprises disposing a medical instrument in said body cavity.

1 20. The method of claim 13 where utilizing said implanted sheath for a  
2 medical procedure comprises performing a diagnostic procedure within said body  
3 cavity.

1 21. The method of claim 13 where utilizing said implanted sheath for a  
2 medical procedure comprises performing a therapeutic procedure within said body  
3 cavity.

1           22.    The method of claim 13 where utilizing said implanted sheath for a  
2   medical procedure comprises disposing a cardiac lead in the coronary sinus of a human  
3   heart.

1           23.    The method of claim 13 wherein said sheath has a moldability and further  
2   comprising changing said moldability of at least a portion of said sheath.

1           24.    The method of claim 23 where providing a moldable sheath comprises  
2   providing a sheath having a moldability dependant on temperature and where changing  
3   said moldability of said sheath while in said body cavity comprises exposing at least a  
4   portion of said sheath to a body cavity temperature elevated above ambient  
5   temperature.

1           25.    The method of claim 23 where providing a moldable sheath comprises  
2   providing a sheath having a moldability dependant on moisture and where changing  
3   said moldability of said sheath while in said body cavity comprises exposing at least a  
4   portion of said sheath to moisture.

1           26.    The method of claim 23 where changing said moldability of said sheath  
2   comprises causing a change of said moldability of said sheath by treating at least a  
3   portion of said sheath exterior to said body cavity prior to implanting.

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1           27.    The method of claim 26 where treating said sheath exterior to said body  
2 cavity prior to implanting to change its moldability comprises exposing at least a portion  
3 of said sheath to radiation.

1           28.    The method of claim 26 where treating said sheath exterior to said body  
2 cavity prior to implanting to change its moldability comprises exposing at least a portion  
3 of said sheath to a chemical treatment.

1           29.    An apparatus comprising:  
2               a moldable sheath capable of at least temporarily retaining a specific shape  
3 imparted to it; and  
4               a shaping tool arranged and configured to be applied to said implanted sheath to  
5 impart said specific shape to said sheath while within said body cavity, which specific  
6 shape is held without continued assistance of said shaping tool.

1           30.    The apparatus of claim 29 where said sheath is characterized by a  
2 sufficient moldability so that removal of said shaping tool does not result in any  
3 substantial displacement of said sheath from said specific shape.

1           31.    The apparatus of claim 29 where said sheath has a lumen and where said  
2 shaping tool applied to said sheath comprises an elongate shaping tool which is  
3 telescopically disposed within said lumen in said sheath.

1           32.    The apparatus of claim 29 where said shaping tool applied to said sheath  
2 comprises a shaping tool applied exteriorly to said sheath and imposing a shaping force  
3 thereon.

1           33.    The apparatus of claim 29 further comprising a medical instrument  
2 disposed into said body cavity through said sheath.

1           34.    The apparatus of claim 29 where medical instrument comprises a  
2 diagnostic instrument.

1           35.    The apparatus of claim 29 where said medical instrument comprises a  
2 therapeutic instrument.

1           36.    The apparatus of claim 29 where said medical instrument comprises a  
2 cardiac lead for disposition within the coronary sinus of a human heart.

1           37.    The apparatus of claim 29 where said moldable sheath has at least a  
2 portion of changed moldability relative to remaining portions of said sheath.

1           38.    The apparatus of claim 37 where said portion which changes its  
2 moldability while in said body cavity comprises at least a portion of said sheath having a

3 moldability dependant on temperature in which said moldability of said sheath is  
4 changed while in said body cavity and exposed to a body cavity temperature elevated  
5 above ambient temperature.

1 39. The apparatus of claim 38 where said portion which changes its memory  
2 shape while in said body cavity comprises at least a portion having a moldability  
3 dependant on moisture in which said moldability of said sheath is changed while in said  
4 body cavity and exposed to moisture.

1 40. The apparatus of claim 37 where said portion of changed moldability has  
2 its moldability changed by treating at least a portion of said sheath exterior to said body  
3 cavity prior to implanting.

1 41. The apparatus of claim 40 where said portion of changed moldability has  
2 its moldability changed by exposing at least a portion of said sheath to radiation.

1 42. The apparatus of claim 40 where said portion of changed moldability has  
2 its moldability changed by exposing at least a portion of said sheath to a chemical  
3 treatment.



1        43.    The apparatus of claim 29 further comprising a reinforcement selectively  
2 disposed on or in said sheath so that a reinforced portion of said sheath has its stiffness  
3 increased relative to remaining portions of said sheath.

1        44.    The apparatus of claim 29 further comprising a reinforcement selectively  
2 disposed on or in said sheath so that a reinforced portion of said sheath has its ability to  
3 retain a specific shape enhanced relative to remaining portions of said sheath.

1        45.    The apparatus of claim 44 where said reinforcement comprises wires,  
2 fibers or braid disposed on or on said sheath.

1        46.    The apparatus of claim 43 where said reinforcement comprises a braided  
2 reinforcement on or in said sheath.

1        47.    The apparatus of claim 43 where said reinforcement comprises fibers  
2 disposed on or in said sheath to provide kink resistance.

1        48.    The apparatus of claim 43 where said reinforcement comprises at least  
2 one layer of material at least partially concentrically disposed on or in said sheath.

1        49.    The apparatus of claim 48 where said at least one layer of material at  
2    least partially concentrically disposed on or in said sheath comprises at least one  
3    cylindrical layer telescopically disposed on or in said sheath.

1        50.    The apparatus of claim 48 where said sheath has a wall with a  
2    predetermined thickness and where said at least one layer of material at least partially  
3    concentrically disposed on or in said sheath comprises a thickening of said sheath wall.

1        51.    The apparatus of claim 48 where said one layer of material has a  
2    moldability different than said sheath.

1        52.    The apparatus of claim 48 where said one layer of material is not  
2    moldable like said sheath.

1        53.    The apparatus of claim 29 where said moldable sheath has a tip portion  
2    and where said tip portion is substantially soft and compliant without appreciable  
3    moldability.

1        54.    The apparatus of claim 29 where said moldable sheath is splittable,  
2    tearable, slittable or peelable.

1 55. The apparatus of claim 29 where said moldable sheath is preshaped  
2 according to its intended application within said body cavity.

1 56. The apparatus of claim 29 where said sheath has a proximal end and  
2 further comprising a sealing valve disposed on said proximal end.

1 57. The apparatus of claim 56 where said sealing valve is splittable, tearable,  
2 slittable or peelable.

1 58. The apparatus of claim 56 where said sealing valve is integral with said  
2 sheath.

1 59. The apparatus of claim 56 where said sealing valve is separate from said  
2 sheath.

1 60. The apparatus of claim 29 further comprising at least one wire disposed in  
2 said sheath and usable for deflecting and positioning said sheath.

1 61. The apparatus of claim 29 further comprising at least one wire disposed in  
2 said sheath for providing an electrical conductor therein.

1           62.    The apparatus of claim 61 where said sheath has a distal end and further  
2 comprising a diagnostic or therapeutic device at or near said distal end and coupled to  
3 said conductor.

1           63.    The apparatus of claim 62 where said diagnostic or therapeutic device  
2 comprises an ultrasound imager.

1           64.    The apparatus of claim 29 further comprising a lumen defined in said  
2 sheath and at least one inflatable balloon disposed on said sheath coupled to said  
3 balloon.

1           65.    The apparatus of claim 64 where said balloon is removable from said  
2 sheath.

1           66.    The apparatus of claim 61 further comprising an electrode disposed on or  
2 in said sheath and coupled to said conductor.

1           67.    The apparatus of claim 29 further comprising at least one optic fiber  
2 disposed in said sheath for providing an optical conductor therein.

1           68.    The apparatus of claim 67 where said sheath has a distal end and further  
2 comprising a photonic device disposed in or near said distal end of said sheath and  
3 coupled to said optic fiber.

1           69.    The apparatus of claim 29 further comprising a lumen defined in said  
2 sheath and a vent communicated to said lumen so that fluid may be infused or  
3 suctioned therethrough.

1           70.    The apparatus of claim 29 where said shaping tool is steerable.

1           71.    The apparatus of claim 29 where said shaping tool comprises a guidewire.

1           72.    The apparatus of claim 29 where said shaping tool has a tip portion which  
2 is substantially soft and compliant without substantial moldability rendering it  
3 nontraumatic.

1           73.    The apparatus of claim 29 where said shaping tool further comprises at  
2 least one lumen defined therethrough and a vent communicated with said lumen.

1           74.    The apparatus of claim 29 where said shaping tool further comprises a  
2 lumen defined therethrough and at least one inflatable balloon communicated with said  
3 lumen.

1           75.    The apparatus of claim 29 where said shaping tool further comprises a  
2 conductor disposed therethrough and an electrode coupled to said conductor for  
3 sensing or delivery of energy from said electrode.

1           76.    An apparatus comprising:  
2 a peel-away sheath with sufficient flexibility to be selectively guideable; and  
3 a steering or guiding tool to impart a selected shape to said sheath.

1           77.    The apparatus of claim 76 where said peel-away sheath is nonmoldable.

1           78.    The apparatus of claim 76 further comprising a proximal sealing valve  
2 coupled to said sheath.

1           79.    The apparatus of claim 76 further comprising a distal diagnostic or  
2 therapeutic device coupled to said sheath.

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